

REMARKS

Applicants request reconsideration of the above-identified application in view of the foregoing proposed amendments and the following remarks.

Applicants have cancelled claims 1-4, 6-20 and 22-30, without prejudice, and reserve the right to pursue the subject matter of the cancelled claims in one or more applications claiming priority herefrom under 35 U.S.C. § 120. Claims 5, 21 and 31 were previously canceled in a Preliminary Amendment dated September 17, 2003. In addition, Applicants have added claims 32-48. As a result, the claims pending in this application will be claims 32-48.

Applicants have added new claims 32-38 to provoke an interference with Stevens et al. U.S. patent application no. 10/289,122 (“the Stevens ‘122 application”). A request for interference with the Stevens ‘122 application pursuant to 37 C.F.R. § 1.604 accompanies this paper.

In addition, Applicants have added new claims 39-48 in order to provoke an interference with allowed claims 1-16, 20-21 and 30-36 of Tau et al. U.S. patent application serial no. 10/289,168 (“the Tau et al. application”). A request for interference with the Tau et al. application pursuant to 37 C.F.R. § 1.604 accompanies this paper.

Applicants’ new claims 32-38 are patterned after certain claims of the Stevens ‘122 application, and Applicants’ new claims 39-48 are patterned after certain claims of the Tau et al. application. Applicants’ claims 32-38 are narrower versions of the corresponding Stevens claims. Just as a claim to a genus cannot be separately patentable from an anticipating species claim, Stevens’ claims cannot be separately patentable from Applicants’ claims because Applicants’ claims define embodiments that fall within the scope of Stevens’ broader claims.

Applicants' claims 39-48 overlap substantially with the subject matters of the corresponding Tau claims.

I. DOUBLE PATENTING REJECTION

Claims 1-4, 6-20 and 22-30 stand rejected solely under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-45 of U.S. Patent No. 6,642,316.

The Examiner asserts that "although the conflicting claims are not identical, they are not patentably distinct from each other because the particular choice of resins employed, in the instant application broadly embracing the homopolymer of propylene, would have been within the skill of a practitioner in the art." Applicants traverse.

Applicants' cancellation of claims 1-4, 6-20 and 22-30 renders moot the Examiner's rejection of these claims for obviousness-type double patenting. Applicants are presenting these claims 1-4, 6-20 and 22-30 in a new continuation application that is being filed concurrently with this paper. Applicants will respond substantively to the Examiner's rejection in that new continuation application.

II. APPLICANTS' NEW CLAIMS COMPLY WITH 35 U.S.C. § 135(b)(2)

A. New Claims 32-38 (Polymer Blends And Articles)

Applicants have added new claims 32-38 to provoke an interference with Stevens et al. U.S. patent application no. 10/289,122 ("the Stevens '122 application"). The Stevens '122 application has pending claims 1-25, which have been allowed. Applicants' new claims 32-38 are directed to the same or substantially the same subject matter as at least Stevens' claims 1-3, 5, 6, 19, 20.

The Stevens '122 application published as US 2003/0195299 A1 on October 16, 2003, and claims priority to U.S. patent applications 60/338,881 and 60/378,203, filed November 6, 2001 and May 5, 2002, respectively. Applicants have presented new claims 32-38 before one year after the October 16, 2003, publication date of the U.S. Stevens '122 application.

Furthermore, the Stevens '122 application has a PCT counterpart, International patent application no. PCT/US02/35714, which published as WO 03/040233 A2 on May 15, 2003, and claims priority to 60/338,881, 60/378,203, and 10/139,786, filed November 6, 2001, May 5, 2002, and May 5, 2002, respectively. Applicants have complied with 35 U.S.C. § 135(b)(2) by presenting new claims 32-38 before one year after the May 15, 2003, publication date of Stevens' PCT application.

B. New Claims 39-48 (Articles And Films)

Applicants have added new claims 39-48 to provoke an interference with the Tau et al. application. The allowed claims of the Tau et al. application are claims 1-16, 20-21 and 30-36. Applicants' new claims 39-48 correspond substantially to allowed independent claim 16 of the Tau et al. application.

The Tau et al. application published as US 2003/0194575 A1 on October 16, 2003 and claims priority to U.S. patent application 60/338,881, filed November 6, 2001. Applicants have presented new claims 39-48 before one year after the October 16, 2003, publication date of the Tau et al. application.

Furthermore, the Tau et al. application has a PCT counterpart, International patent application no. PCT/US02/35566, which published as WO 03/040202 A2 on May 15, 2003, and claims priority to provisional application no. 60/338,881, filed on November 6, 2001, and application no. 10/139,786, filed on May 5, 2002. Applicants have complied with 35 U.S.C.

§ 135(b)(2) by presenting new claims 39-48 before one year after the May 15, 2003, publication date of the Tau et al. PCT application.

III. APPLICANTS' NEW CLAIMS ARE ALLOWABLE

A. New Claims 32-38 (Polymer Blends And Articles) Are Allowable

Applicants' new claims 32-38 are modeled after claims 1, 2, 3, 5, 6, 19, 20 of the Stevens '122 application. The table below shows that Applicants' new claims 32-38 are narrower versions of Stevens' claims, which have been allowed by the Office.

| Datta claims | Stevens claims |
|---|--|
| Claim 32 (new): A polymer blend comprising (i) a crystalline polypropylene continuous phase having a weight average molecular weight, and (ii) an at least partially crystalline copolymer dispersed phase having a weight average molecular weight lower than the weight average molecular weight of the crystalline polypropylene continuous phase, the dispersed phase comprising propylene and ethylene and/or one or more unsaturated comonomers, the dispersed phase prepared using a metallocene catalyst. | 1. An impact-resistant polymer blend comprising (i) a crystalline polypropylene matrix having a weight average molecular weight, and (ii) an at least partially crystalline copolymer impact modifier having a molecular weight lower than the weight average molecular weight of the crystalline polypropylene matrix, the impact modifier comprising propylene and ethylene and/or one or more unsaturated comonomers, the modifier prepared using a metallocene catalyst or a nonmetallocene, metal-centered, heteroaryl ligand catalyst. |
| Claim 33 (new): The polymer blend of Claim 32 in which the crystalline polypropylene continuous phase is a homopolymer. | 2. The polymer blend of Claim 1 in which the crystalline polypropylene matrix is a homopolymer. |
| Claim 34 (new): The polymer blend of Claim 32 in which the crystalline polypropylene continuous phase is a copolymer. | 3. The polymer blend of Claim 1 in which the crystalline polypropylene matrix is a copolymer. |
| Claim 35 (new): The polymer blend of Claim 32 in which the dispersed phase is a copolymer of propylene and ethylene. | 5. The polymer blend of claim 1 in which the impact modifier is at least one of a copolymer of propylene and ethylene or a terpolymer of propylene, ethylene and C ₄₋₂₀ α -olefin or diene. |

| Datta claims | Stevens claims |
|---|---|
| <p>Claim 36 (new): The polymer blend of Claim 32 in which the dispersed phase is characterized as (A) comprising at least about 88.4 weight percent of units derived from propylene and about 7.3 to 11.6 weight percent of units derived from ethylene, and (B) having an X-ray diffraction pattern that reports more gamma-form crystals than a comparable copolymer prepared using a Ziegler-Natta catalyst.</p> | <p>6. The polymer blend of Claim 1 in which the impact modifier is characterized as (A) comprising at least about 60 weight percent (wt%) of units derived from propylene, about 0.1-35 wt% of units derived from ethylene, and 0 to about 35 wt% of units derived from one or more unsaturated comonomers, with the proviso that the combined weight percent of units derived from ethylene and the unsaturated comonomer does not exceed about 40, and (B) having at least one of the following properties: (i) ¹³C NMR peaks corresponding to a regio-error at about 14.6 and about 15.7 ppm, the peaks of about equal intensity, (ii) A DSC curve with a T_{me} that remains essentially the same and a T_{max} that decreases as the amount of comonomer in the copolymer is increased, and (iii) an X-ray diffraction pattern that reports more gamma-form crystals than a comparable copolymers prepared with a Ziegler-Natta (Z-N) catalyst.</p> |
| <p>Claim 37 (new): An article of manufacture comprising the polymer blend of Claim 32.</p> | <p>19. An article comprising the polymer blend of Claim 1.</p> |
| <p>Claim 38 (new): An article of manufacture comprising the polymer blend of Claim 36.</p> | <p>20. An article comprising the polymer blend of Claim 6.</p> |

New claims 32-38 do not encompass new matter. Applicants demonstrate in Appendix A to this paper that new claims 32-38 are fully supported by the specification. Two of the limitations of Applicants' new claims are inherently disclosed in Applicants' specification. The inherent disclosure of these limitations is discussed below and in Appendix A and demonstrated by the supporting declarations of Srivatsan Srinivas, Ph.D., and Professor Rufina G. Alamo, which are submitted herewith.

1. Inherent Disclosure Of The Weight Average Molecular Weight Limitation

The first of the two inherently disclosed limitations is in independent claim 32.

This limitation requires “an at least partially crystalline copolymer dispersed phase having a weight average molecular weight lower than the weight average molecular weight of the crystalline polypropylene continuous phase.” Weight average molecular weight (“ M_w ”) values for several exemplary copolymers that can be used in the dispersed phase are expressly disclosed in Table 1 of the specification (page 37; see e.g., SPC-1 and SPC-3). Several grades of commercially available Escorene polymers are expressly identified in examples. The M_w values for these commercial Escorene polymers are readily ascertainable by anyone of ordinary skill in the art using conventional methods.

One of these commercial polymers is Escorene 4292 (pages 39, 41, 47), which is a crystalline, isotactic homopolypropylene. As demonstrated in the accompanying Declaration of Srivatsan Srinivas, Ph.D., Escorene 4292 has a M_w value of about 369,000. This value is higher than the disclosed M_w values for exemplary copolymers SPC-1 and SPC-3: M_w of SPC-1 = 248,900; M_w of SPC-3 = 265,900 (page 37, Table 1).

Applicants’ inventive blends comprise a continuous phase and a dispersed phase. These phases may themselves be blends of two polymer components – a crystalline polypropylene “first polymer component” or “FPC” and a crystallizable propylene copolymer “second polymer component” or “SPC.” Applicants’ specification teaches that the blends embrace a very broad range of compositions of FPC and SPC – for example, from about 1% to about 95% by weight of the FPC (page 14) and from about 5% to about 99% by weight of the SPC (page 17). Thus, the specification discloses that the continuous phase may be predominantly, or even almost entirely, a FPC such as Escorene 4292. Likewise, the

specification discloses that the dispersed phase may be predominantly, or even almost entirely, a SPC, such as exemplary copolymers SPC-1 or SPC-3.

Applicants note the following passage from their specification: "Polypropylene blends made by a combination of a FPC and a SPC of the present invention that give a heterophase morphology in which the crystalline polymer is the continuous phase in [sic] are excluded from the invention" (page 11, lines 13-16). This passage does not exclude blends in which the continuous phase is itself a blend that is predominantly, or even almost entirely, either the FPC or the SPC. As noted above, the specification teaches that the blends embrace a very broad range of compositions of FPC and SPC. Accordingly, blends in which the continuous phase is itself a blend that is almost entirely (e.g., up to about 95%) a crystalline polypropylene FPC plus a small amount of copolymer SPC (e.g., about 5%) are within the scope of Applicants' invention and disclosure.

Thus, Applicants' specification inherently discloses blends comprising "an at least partially crystalline copolymer dispersed phase having a weight average molecular weight lower than the weight average molecular weight of the crystalline polypropylene continuous phase."

2. Inherent Disclosure Of The Gamma Crystallinity Limitation

The second inherently disclosed limitation is in dependent claim 36. This limitation requires that the dispersed phase have "an X-ray diffraction pattern that reports more gamma-form crystals than a comparable copolymer prepared using a Ziegler-Natta catalyst." It is well-known in the art that the propylene-ethylene copolymers made using metallocene catalysts of the type disclosed in Applicants' specification have more gamma-form crystals than a comparable copolymer made using a Ziegler-Natta catalyst. This fact is demonstrated in the accompanying Declaration of Professor Rufina G. Alamo and the literature references cited

therein. Therefore, Applicants' specification inherently discloses this gamma-form crystallinity claim limitation.

B. New Claims 39-48 (Articles And Films) Are Allowable

Applicants have added new claims 39-48 for the purpose of provoking an interference with the Tau et al. application. Each of Applicants' new claims 39-48 is supported by the specification of this application under principles of inherency. Independent claims 39 and 47 are partial copies of Tau et al. allowed claim 16.

Applicants' new claims 39-48 are modeled after claim 16 of the Tau et al. application. Applicants' new claims 39-48 are narrower versions of Tau et al. claim 16 that has been allowed by the Office.

Applicants demonstrate in Appendix A to this paper that new claims 39-48 are supported by their specification. One of the limitations of Applicants' new claims is inherently disclosed in Applicants' specification. The inherent disclosure of this limitation is discussed below and in Appendix A and is demonstrated by the supporting declaration of Professor Rufina G. Alamo, which is submitted herewith.

The inherently disclosed limitation is in independent claims 39 and 47. This limitation requires that the propylene-ethylene copolymer has "an X-ray diffraction pattern that reports more gamma-form crystals than a copolymer comparable in all respects except that it is prepared using a Ziegler-Natta catalyst." It is well-known in the art that the polypropylene homopolymers and propylene-ethylene copolymers made using metallocene catalysts of the type disclosed in Applicants' specification have more gamma-form crystals than a comparable copolymer made using a Ziegler-Natta catalyst. This fact is demonstrated in the accompanying

declaration of Professor Rufina G. Alamo and the literature references cited therein. Therefore, Applicants' specification inherently discloses this gamma-form crystallinity claim limitation.

1. New Claim 39

New claim 39 copies allowed claim 16 of the Tau et al. application, except in the following respects:

- (1) Claim 39 relates to an article of manufacture instead of a film having at least one layer (see Claim 40).
- (2) Claim 39 specifies that polymer (A) comprises about 5 to about 99 weight percent of the blend instead of "comprising at least 50 weight percent of the blend" in Tau et al. claim 16.
- (3) Claim 39 specifies that polymer (A) comprises a copolymer of about 96 to about 88 weight percent of propylene derived units and about 4 to about 11.6 weight percent of ethylene derived units instead of "comprising at least about 60 weight percent of units derived from propylene and at least about 4 weight percent of units derived from the group consisting of ethylene and an unsaturated monomer other than ethylene" in Tau et al. claim 16
- (4) Claim 39, like Tau et al. claim 16, specifies that polymer (A) is further characterized as having an X-ray diffraction pattern that exhibits more gamma-form crystals than a copolymer comparable in all respects except that it is prepared with a Ziegler-Natta catalyst. Tau et al. claim 16 also states that polymer (A) is characterized by having at least one of three properties, the X-ray diffraction property just referred to and either a ¹³C NMR property relating to a specified regio-error (item "(i)") and a DSC melting property (item "(ii)"). Thus, Applicants' claim 39 is narrower in most respects than Tau et al. claim 16.

New claim 39 does not encompass new matter. It is fully supported by Applicants' specification, as explained in Appendix A and under principles of inherency.

2. New Claim 40

New claim 40 depends from new claim 39. It further defines the article of manufacture as a film, as specified in Tau et al. claim 16.

New claim 40 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

3. New Claim 41

New claim 41 depends from new claim 40. It further defines the amount of polymer (A) contained in the blend as about 30 to about 98 weight percent of the blend.

New claim 41 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

4. New Claim 42

New claim 42 depends from new claim 41. It further defines the article of manufacture as a film, as specified in Tau et al. claim 16.

New claim 42 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

5. New Claim 43

New claim 43 depends from new claim 39. It further defines the amount of polymer (A) contained in the blend as about 60 to about 98 weight percent of the blend.

New claim 43 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

6. New Claim 44

New claim 42 depends from new claim 43. It further defines the article of manufacture as a film, as specified in Tau et al. claim 16.

New claim 44 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

7. New Claim 45

New claim 45 depends from new claim 39. It further defines the amount of polymer (A) contained in the blend as about 75 to about 99 weight percent of the blend.

New claim 45 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

8. New Claim 46

New claim 46 depends from new claim 45. It further defines the article of manufacture as a film, as specified in Tau et al. claim 16.

New claim 46 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

9. New Claim 47

New claim 47 copies allowed claim 16 of the Tau et al. application, except in the following respects:

(1) Claim 47 relates to an article of manufacture instead of a film having at least one layer (see Claim 48).

(2) Claim 47 specifies that polymer (A) comprises about 5 to about 99 weight percent of the blend instead of "comprising at least 50 weight percent of the blend" in Tau et al. claim 16.

(3) Claim 47 specifies that polymer (A) comprises at least about 65 weight percent of propylene derived units and at least about 4 weight percent of ethylene derived units instead of "comprising at least about 60 weight percent of units derived from propylene and at least about 4 weight percent of units derived from the group consisting of ethylene and an unsaturated monomer other than ethylene" in Tau et al. claim 16

(4) Claim 47, like Tau et al. claim 16, specifies that polymer (A) is further characterized as having an X-ray diffraction pattern that exhibits more gamma-form crystals than a copolymer comparable in all respects except that it is prepared with a Ziegler-Natta catalyst. Tau et al. claim 16 also states that polymer (A) is characterized by having at least one of three properties, the X-ray diffraction property just referred to and either a ^{13}C NMR property relating to a specified regio-error (item "(i)") and a DSC melting property (item "(ii)"). Thus Applicants' claim 39 is narrower in most respects than Tau et al. claim 16.

New claim 47 does not encompass new matter. It is fully supported by Applicants' specification under principles of inherency as explained above and in Appendix A.

10. New Claim 48

New claim 48 depends from new claim 47. It further defines the article of manufacture as a film, as specified in Tau et al. claim 16.

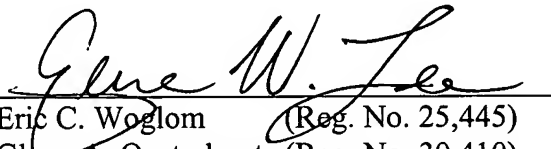
New claim 48 does not encompass new matter. It is fully supported by Applicants' specification as explained in Appendix A.

IV. CONCLUSION

Applicants respectfully request that new claims 32-38 be allowed and an interference be declared with Stevens et al. U.S. patent application no. 10/289,122 in accordance with the accompanying Request for Interference.

Applicants further respectfully request that new claims 39-48 be allowed and an interference be declared Tau et al. U.S. patent application no. 10/289,168 in accordance with the accompanying Request for Interference.

Respectfully submitted,



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APPENDIX A

The following table demonstrates that new claims 32-48 are fully supported by Applicants' specification.

| Claim limitation | Exemplary disclosure |
|--|---|
| <p>Claim 32 (new): A polymer blend comprising (i) a crystalline polypropylene continuous phase having a weight average molecular weight, and</p> | <p>“[B]lending a crystalline propylene polymer, hereinafter referred to as the ‘first polymer component, (FPC)’ and a crystallizable propylene alpha olefin copolymer, hereinafter referred to as the ‘second polymer component (SPC)’” (page 6).</p> <p>“The present invention is directed to blends with heterophase morphology formed by blending a FPC which is a predominately crystalline stereoregular polypropylene with a SPC with is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene. Optional components of the blend are SPC2, a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene), and process oil.” (Page 7.)</p> <p>The specification discloses that the blend may vary widely in composition, including predominantly, or even almost entirely, FPC (e.g., up to about 95%). Thus, the continuous phase may be predominantly FPC:</p> <p>“The thermoplastic polymer blend compositions of the present invention may comprise from about 1% to about 95% by weight of FPC” (page 14).</p> <p>“The dispersed phase consists of a crystalline mixture of FPC with some amount of SPC2 and SPC due to thermodynamic mixing of polymers. The continuous phase consists of the balance of the polymers not included in the dispersed phase.” (Page 11.)</p> <p>“The polypropylene of the present invention is predominately crystalline” (page 13).</p> |
| <p>(ii) an at least partially crystalline copolymer dispersed phase having a weight average molecular weight lower than the weight average molecular weight of the crystalline polypropylene continuous phase,</p> | <p>The specification discloses that the blend may vary widely in composition, including predominantly SPC (e.g., as little as about 5%). Thus, the dispersed phase may be predominantly, or even almost entirely, SPC:</p> <p>“The compositions of the present invention may comprise from about 5% to about 99% by weight of the SPC” (page 17).</p> <p>“The dispersed phase consists of a crystalline mixture of</p> |

| Claim limitation | Exemplary disclosure |
|--|--|
| | <p>FPC with some amount of SPC2 and SPC due to thermodynamic mixing of polymers. The continuous phase consists of the balance of the polymers not included in the dispersed phase.” (Page 11.)</p> <p>“And, the term ‘crystallizable,’ as used herein for SPC describes polymers which are mainly amorphous in the undeformed state, but can crystallize upon stretching or annealing. Crystallization may also be initiated by the presence of a crystalline polymer such as the FPC.” (Page 6.)</p> <p>“SPC...is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene” (page 7).</p> <p>“The SPC and the SPC2, if used, have stereoregular propylene sequences long enough to crystallize” (page 7).</p> <p>“The SPC of the polymer blend compositions of the present invention comprises a crystallizable copolymer of propylene and another alpha-olefin having less than 10 carbon atoms, preferably ethylene” (page 15).</p> <p>“The crystallinity of the second polymer component is, preferably, according to one embodiment, from about 1% to about 65% of homoisotactic polypropylene, preferably between 3% to 30%” (page 16).</p> <p>Weight average molecular weight is expressly set forth for exemplary SPC copolymers, including (page 37): SPC-1: M_w = 248,900 SPC-3: M_w = 265,900</p> <p>A number of blends of FPC and SPC are disclosed in examples, where FPC is expressly disclosed as several grades of commercially-available polymer known as Escorene. One of these commercial polymers, Escorene 4292 (pages 39, 41, 47), is a crystalline, isotactic homopolypropylene that has a M_w of about 369,000 (Declaration of Srivatsan Srinivas, Ph.D.).</p> |
| the dispersed phase comprising propylene and ethylene and/or one or more unsaturated comonomers, | <p>The specification discloses that the blend may vary widely in composition, including predominantly SPC (e.g., as little as about 5%). Thus, the dispersed phase may be predominantly, or even almost entirely, SPC:</p> <p>“The compositions of the present invention may comprise from about 5% to about 99% by weight of the SPC” (page 17).</p> |

| Claim limitation | Exemplary disclosure |
|---|---|
| | <p>“The dispersed phase consists of a crystalline mixture of FPC with some amount of SPC2 and SPC due to thermodynamic mixing of polymers. The continuous phase consists of the balance of the polymers not included in the dispersed phase.” (Page 11.)</p> <p>“SPC...is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene” (page 7).</p> <p>“The SPC and the SPC2, if used, have stereoregular propylene sequences long enough to crystallize” (page 7).</p> <p>“The SPC of the polymer blend compositions of the present invention comprises a crystallizable copolymer of propylene and another alpha-olefin having less than 10 carbon atoms, preferably ethylene” (page 15).</p> |
| the dispersed phase prepared using a metallocene catalyst. | <p>“The SPC is made with a single sited metallocene catalyst” (page 9).</p> <p>The exemplary SPC propylene-ethylene copolymers were made using a metallocene catalyst. Example 1 states that a metallocene catalyst was used: dimethyl silyl bridged bis-indenyl Hafnium dimethyl plus activator (page 35).</p> <p>This catalyst was used to SPC-1 and SPC-3, which are two of the exemplary copolymers for which M_w data were expressly provided (page 37).</p> |
| Claim 33 (new): The polymer blend of Claim 32 in which the crystalline polypropylene continuous phase is a homopolymer. | <p>“[T]he FPC component i.e., the polypropylene polymer component may be homopolypropylene, or copolymers of propylene, or sometimes mixtures thereof” (page 13).</p> <p>“The polypropylene can vary widely in composition. For example, substantially isotactic polypropylene homopolymer or propylene copolymer...can be used” (page 13).</p> <p>A number of blends of FPC and SPC are disclosed in examples, where FPC is expressly disclosed as several grades of commercially-available polymer known as Escorene. One of these commercial polymers, Escorene 4292, is a crystalline, isotactic homopolypropylene (pages 39, 41, 47).</p> |

| Claim limitation | Exemplary disclosure |
|--|---|
| <p>Claim 34 (new): The polymer blend of Claim 32 in which the crystalline polypropylene continuous phase is a copolymer.</p> | <p>“[T]he FPC component i.e., the polypropylene polymer component may be homopolypropylene, or copolymers of propylene, or sometimes mixtures thereof” (page 13).</p> <p>“The polypropylene can vary widely in composition. For example, substantially isotactic polypropylene homopolymer or propylene copolymer...can be used” (page 13).</p> <p>A number of blends of FPC and SPC are disclosed in examples, where FPC is expressly disclosed as several grades of commercially-available polymer known as Escorene. Two of these commercial polymers, Escorene 9272 and 7132 are copolymers (pages 44 and 46).</p> |
| <p>Claim 35 (new): The polymer blend of Claim 32 in which the dispersed phase is a copolymer of propylene and ethylene.</p> | <p>“SPC...is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene” (page 7).</p> <p>“The SPC of the polymer blend compositions of the present invention comprises a crystallizable copolymer of propylene and another alpha-olefin having less than 10 carbon atoms, preferably ethylene” (page 15).</p> <p>Example 1 discloses an exemplary process for producing a propylene-ethylene copolymer second component (pages 35-36).</p> |
| <p>Claim 36 (new): The polymer blend of Claim 32 in which the dispersed phase is characterized as (A) comprising at least about 83.6 weight percent of units derived from propylene and about 7.3 to 11.6 weight percent of units derived from ethylene, and</p> | <p>Ethylene content is expressly set forth for many exemplary SPC copolymers, including two for which M_w data were expressly provided (page 37):</p> <p>SPC-1: ethylene content = 7.3 weight percent</p> <p>SPC-3: ethylene content = 11.6 weight percent</p> |
| <p>(B) having an X-ray diffraction pattern that reports more gamma-form crystals than a comparable copolymer prepared using a Ziegler-Natta catalyst.</p> | <p>“The SPC is made with a single sited metallocene catalyst” (page 9).</p> <p>The exemplary SPC propylene-ethylene copolymers were made using a metallocene catalyst.. Example 1 states that a metallocene catalyst was used: dimethyl silyl bridged bis-indenyl Hafnium dimethyl plus activator (page 35).</p> <p>This catalyst was used to SPC-1 and SPC-3, which are the exemplary copolymers for which M_w data were expressly provided (page 37). As demonstrated in the Declaration of Professor Rufina G. Alamo, propylene-ethylene copolymers of the type made using the process of Applicants’ Example 1 and having an ethylene content of up to at least 11.6 weight</p> |

| Claim limitation | Exemplary disclosure |
|--|---|
| | percent (e.g., SPC-1 and SPC-3) have more gamma-form crystals than a comparable copolymers made using a Ziegler-Natta catalyst. |
| Claim 37 (new): An article of manufacture comprising the polymer blend of Claim 32. | The specification expressly refers to articles made from the blends. See, e.g., pages 2, 28, 29, 31. |
| Claim 38 (new): An article of manufacture comprising the polymer blend of Claim 36. | The specification expressly refers to articles made from the blends. See, e.g., pages 2, 28, 29, 31. |
| Claim 39 (new): An article of manufacture made from a polymer blend comprising at least one polymer (A) and at least one polymer (B), | <p>The specification expressly refers to articles made from the blends. See, e.g., pages 2, 28, 29, 31.</p> <p>“[B]lending a crystalline propylene polymer, hereinafter referred to as the ‘first polymer component, (FPC)’ and a crystallizable propylene alpha olefin copolymer, hereinafter referred to as the ‘second polymer component (SPC)’” (page 6).</p> <p>“The present invention is directed to blends with heterophase morphology formed by blending a FPC which is a predominately crystalline stereoregular polypropylene with a SPC with is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene. Optional components of the blend are SPC2, a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene), and process oil.” (Page 7.)</p> |
| polymer (A) comprising about 5 to about 99 weight percent of the blend, and polymer (A) comprising a copolymer of about 96 to about 88.4 weight percent of propylene derived units and about 4 to about 11.6 weight percent of ethylene derived units, and | <p>“The compositions of the present invention may comprise from about 5% to about 99% by weight of the SPC” (page 17).</p> <p>SPC is a propylene copolymer “having about 4 wt. % to about 35 wt. % ethylene” (page 8). SPC-3 is an exemplary SPC copolymer with an ethylene content of 11.6 weight percent (Table 1, page 37).</p> |
| polymer (A) is further characterized as having an X-ray diffraction pattern that exhibits more gamma-form crystals than a copolymer comparable in all respects except that it is prepared with a Ziegler-Natta catalyst, and | As demonstrated in the Declaration of Professor Rufina G. Alamo, propylene-ethylene copolymers of the type made using the process of Applicants’ Example 1 and having an ethylene content of up to at least 11.6 weight percent (e.g., SPC-1 and SPC-3) have more gamma-form crystals than a comparable copolymers made using a Ziegler-Natta catalyst. |

| Claim limitation | Exemplary disclosure |
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| polymer (B) comprising a thermoplastic polymer other than polymer (A). | <p>“[B]lending a crystalline propylene polymer, hereinafter referred to as the ‘first polymer component, (FPC)’ and a crystallizable propylene alpha olefin copolymer, hereinafter referred to as the ‘second polymer component (SPC)’” (page 6).</p> <p>“The present invention is directed to blends with heterophase morphology formed by blending a FPC which is a predominately crystalline stereoregular polypropylene with a SPC with is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene. Optional components of the blend are SPC2, a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene), and process oil.” (Page 7.)</p> |
| Claim 40 (new): The article of Claim 39 in the form of a film. | The specification expressly discloses film (page 31). |
| Claim 41 (new): The article of Claim 39 in which polymer (A) comprises about 30 to about 98 weight percent of the blend. | “The compositions of the present invention may comprise ... from about 30% to about 98% by weight of the SPC” (page 17). |
| Claim 42 (new): The article of Claim 41 in the form of a film. | The specification expressly discloses film (page 31). |
| Claim 43 (new): The article of Claim 39 in which polymer (A) comprises about 60 to about 98 weight percent of the blend. | “Most preferably, [the blend compositions] comprise from about 60% to about 98% and even more preferably 75% to 99% by weight of the SPC” (page 17). |
| Claim 44 (new): The article of Claim 43 in the form of a film. | The specification expressly discloses film (page 31). |
| Claim 45 (new): The article of Claim 39 in which polymer (A) comprises about 75 to about 99 weight percent of the blend. | “Most preferably, [the blend compositions] comprise from about 60% to about 98% and even more preferably 75% to 99% by weight of the SPC” (page 17). |
| Claim 46 (new): The article of Claim 45 in the form of a film. | The specification expressly discloses film (page 31). |

| Claim limitation | Exemplary disclosure |
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| <p>Claim 47 (new): An article of manufacture made from a polymer blend comprising at least one polymer (A) and at least one polymer (B),</p> | <p>The specification expressly refers to articles made from the blends. See, e.g., pages 2, 28, 29, 31.</p> <p>“[B]lending a crystalline propylene polymer, hereinafter referred to as the ‘first polymer component, (FPC)’ and a crystallizable propylene alpha olefin copolymer, hereinafter referred to as the ‘second polymer component (SPC)’” (page 6).</p> <p>“The present invention is directed to blends with heterophase morphology formed by blending a FPC which is a predominately crystalline stereoregular polypropylene with a SPC with is a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene) and propylene. Optional components of the blend are SPC2, a crystallizable copolymer of a C₂, C₄-C₂₀ α-olefin (preferably ethylene), and process oil.” (Page 7.)</p> |
| <p>polymer (A) comprising about 5 to about 99 weight percent of the blend, and polymer (A) comprising at least about 65 weight percent of units derived from propylene and at least about 4 weight percent of units derived from a comonomer selected from the group consisting of ethylene and an unsaturated monomer other than ethylene, and</p> | <p>“The compositions of the present invention may comprise from about 5% to about 99% by weight of the SPC” (page 17).</p> <p>“One preferable embodiment is blending isotactic polypropylene (FPC) with ethylene propylene copolymers (SPC) having about 4 wt. % to about 35 wt. % ethylene” (page 8).</p> |
| <p>polymer (A) is further characterized as having an X-ray diffraction pattern that exhibits more gamma-form crystals than a copolymer comparable in all respects except that it is prepared with a Ziegler-Natta catalyst, and</p> | <p>As demonstrated in the Declaration of Professor Rufina G. Alamo, propylene-ethylene copolymers of the type made using the process of Applicants’ Example 1 and having an ethylene content of at least about 4 weight percent and up to at least 11.6 weight percent (e.g., SPC-1 and SPC-3) have more gamma-form crystals than a comparable copolymers made using a Ziegler-Natta catalyst.</p> |
| <p>polymer (B) comprising a thermoplastic polymer other than polymer (A).</p> | <p>“[B]lending a crystalline propylene polymer, hereinafter referred to as the ‘first polymer component, (FPC)’ and a crystallizable propylene alpha olefin copolymer, hereinafter referred to as the ‘second polymer component (SPC)’” (page 6).</p> <p>“The present invention is directed to blends with heterophase morphology formed by blending a FPC which is a</p> |

| Claim limitation | Exemplary disclosure |
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| | predominately crystalline stereoregular polypropylene with a SPC with is a crystallizable copolymer of a C ₂ , C ₄ -C ₂₀ α -olefin (preferably ethylene) and propylene. Optional components of the blend are SPC2, a crystallizable copolymer of a C ₂ , C ₄ -C ₂₀ α -olefin (preferably ethylene), and process oil.” (Page 7.) |
| Claim 48 (new): The article of Claim 47 in the form of a film. | The specification expressly discloses film (page 31). |